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ABSTRACT

This report covers the period from the initial grant award for the establishment of a Research Coordinating Unit (RCU) by the Office of Education in June 1966 to August 31, 1969. There are four major sections. "The Problem and the Proposed Solution" deals with the historical background of the RCU and lists the objectives set forth in the proposal. "Methods" discusses approaches to establishing research priorities, coordinating research activities, assisting agencies and institutions in the development of research proposals, and disseminating research information. "Results" lists general effects of the RCU activity and describes specific projects in which the RCU participated. "Conclusions and Recommendations" cites areas of research need. (JK)

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INTRODUCTION

The Vocational Education Act of 1963 made Federal funds available for the support of research projects in occupational education and provided each state the opportunity to establish a research coordinating unit on a project basis. Texas was one of 44 states to take advantage of this opportunity and the Texas Occupational Research Coordinating Unit was established pursuant to the approval of a proposal submitted to the U. S. Office of Education by the Texas State Board for Vocational Education in 1966. The initial grant award by the U. S. Office of Education provided for the funding of the Unit from June 22, 1966, through July 31, 1967. Subsequent revisions of the grant award extended the funding period through August 31, 1969.

The Unit is an organizational segment of the Occupational and Technical Education Department of the Texas Education Agency and is specifically designated by the State Board for Vocational Education as the organization responsible for the coordination of research, developmental, experimental, and pilot projects in occupational education, including projects supported with Federal funds under the Vocational Education Acts.

Since its inception, the activities of the Unit have been directed continuously toward the accomplishment of its major objectives of research stimulation, facilitation, coordination, and dissemination. Quarterly reports describing the specific activities of the Unit were submitted to the U. S. Office of Education as required by the terms of the grant award. This report provides a final summation of the significant activities and accomplishments of the Unit during the entire grant award period beginning June 22, 1966, and ending August 31, 1969.

The Texas State Plan for Vocational Education provides for the continuation of the Unit after August 31, 1969, under Section 131(b)(1) of the Vocational Education Amendments of 1968.

THE PROBLEM AND THE PROPOSED SOLUTION

Prior to the enactment of the Vocational Education Act of 1963, vocational program planners acknowledged the potential value of research in occupational education and recognized the need for statewide coordination of occupational research activity, but little could be accomplished because of long-standing funding and staffing limitations. Some research related to occupational education had been undertaken at a few schools, but since there was no organization in Texas specifically responsible for the encouragement and support of occupational research, these efforts usually represented the spontaneous, un-coordinated activities of individual researchers at widely separated institutions. The results of such research were rarely disseminated to other institutions. In the absence of adequate research coordination and dissemination, duplication of effort was inevitable.

With the implementation of the 1963 Act and its specific provisions for the improvement of occupational education through research, it became increasingly clear that an office should be established within the Texas Education Agency to encourage, facilitate, and coordinate occupational research and to disseminate the results of research throughout the state and nation.

A proposal for the establishment and funding of a research coordinating unit for vocational education in Texas was developed and submitted to the U. S. Office of Education under the provisions of Section 4(c) of the Vocational Education Act of 1963. The proposal described in detail the need for research coordination in the state and set forth specific objectives for accomplishment by the proposed unit. These were: (1) to identify areas of need in research and establish priorities, (2) to stimulate among agencies and institutions in the State of Texas an interest in vocational education research, (3) to coordinate the efforts of these agencies and institutions in the areas of vocational research, (4) to consult with these agencies and institutions assisting them in seeking funds needed for research and consultative services in methodology and techniques, and (5) to collect, catalogue, and prepare for publication the results of various research projects and to disseminate these published findings to vocational educators in Texas and throughout the nation.

The proposal requested that the unit be funded for a period of 37 months beginning June 1, 1966, and ending June 30, 1969. The proposal was approved as submitted. The initial grant award provided for the funding of the unit from June 22, 1966, through July 31, 1967, with assurance that additional awards, subject to the availability of appropriations, would provide for the operation of the unit over the requested 37 month period. (Subsequent revisions of the grant award extended the funding period through August 31, 1969.)

Following approval of the proposal and the announcement of the grant award by the U. S. Office of Education, the Texas Education Agency took immediate action to implement the proposed solution to the problem of inadequate occupational research coordination and dissemination in Texas by the formal designation and establishment of the Texas Occupational Research Coordinating Unit.

METHODS

As provided for in the proposal, the Texas State Board for Vocational Education authorized the establishment of the Unit on June 22, 1966, as an organizational segment of the Department of Vocational and Technical Education. The organizational plan placed the Unit under the general supervision of the Assistant Commissioner for Vocational and Technical Education and provided for the employment of a staff consisting of a director, an assistant director, three research assistants, and three secretaries. Dr. A. Russell Davis was appointed as director August 1, 1966, and served until July 31, 1967. The present director, Mr. Ray Barber, was appointed September 1, 1967. Mr. Oscar Millican has been employed as assistant director since October 1, 1966, and served as acting director during the month of August 1967. Mr. Bob Nichols has been employed as a research assistant since December 1, 1966. Mr. Bill Barnes joined the staff as research assistant and dissemination specialist on February 1, 1968. Two of the secretarial positions have been filled continuously since December 1, 1966. One research assistant position and one secretarial position which appeared in the original budget remained vacant throughout the funding period.

Although the Unit was officially established in June 1966, it did not become operational in its research coordination functions until December of that year. Most of the activities prior to December were devoted to the formulation and development of plans and procedures, the acquisition of office space, equipment, and supplies, and the selection of the professional and secretarial staff. However, some progress was made during this period in publicizing the purpose, objectives, and functions of the Unit through various media and personal contacts with potential researchers.

Shortly before the Unit became fully operational, it was announced that the full amount of Federal funds for support of occupational research during fiscal year 1967 would not be appropriated as authorized by Section 4(c) of the 1963 Act. It was also announced that most of the money appropriated for research during fiscal year 1967 was already obligated for the continuation of research projects which were initiated during the preceding fiscal year. In effect, this meant that little or no Federal money would be available for support of new occupational research projects during fiscal year 1967. There was no assurance that even the most worthy projects stimulated and coordinated by the Unit could be funded.

In view of these developments, the Assistant Commissioner for Vocational and Technical Education immediately made funds available to the Unit for support of research under Section 4(a) of the 1963 Act. Although the funds available from this source were limited, this prompt action enabled the Unit to assure potential researchers that acceptable projects could be funded, and this assurance provided a realistic incentive for research project development.

One of the objectives of the Unit, as described in a preceding paragraph, is the identification of areas of need in occupational research and the establishment of priorities for research. The initiation of activities leading toward the accomplishment of this objective was given special emphasis during the first few months of operation. These activities included: (1) analysis of a questionnaire which was administered to approximately 100 members of the staff of the Department of Vocational and Technical Education to elicit their opinions concerning areas of need and priorities for research in occupational education, (2) analysis of responses to inquiries sent to the colleges and universities of the State concerning past, ongoing, and planned research in occupational education, (3) acquisition and review of all available publications pertaining to areas of need and priorities for research in occupational education, (4) meetings and conferences with individuals and groups from various agencies and institutions to discuss needs and priorities in occupational education, and (5) development of a list of priorities for occupational research in Texas based on a review and synthesis of the information gathered from the sources identified in (1) through (4). The list identified more than forty researchable topics in priority order. The first ten of these were:

1. Develop improved methods of providing occupational information to counselors and students

2. Determine ways and means of improving the image of occupational education among students, parents, and educators

3. Determine the changes needed in teacher education programs

4. Develop improved methods of communication between employers and educators

5. Develop new methods of follow-up counseling to induce public school dropouts to return to school and enroll in occupational education programs

6. Develop improved techniques for occupational guidance

7. Determine the curricula changes needed in high school occupational education programs

8. Determine the effectiveness of the work-study program in reducing the number of dropouts

9. Develop and conduct follow-up studies to determine the effectiveness of existing occupational education programs in preparing students for employment

10. Develop strategies and models for the evaluation of occupational education

The identification of these needs and priorities provided a framework within which the Unit could structure its diversified research coordination activities.

The stimulation of interest in occupational research among agencies and institutions in Texas was set forth in the proposal document as another objective for accomplishment by the Unit. Activities directed toward the realization of this objective included: (1) announcement of the purpose and functions of the Unit in various media distributed to potential researchers throughout the State, (2) preparation and dissemination of a brochure describing the functions of the Unit and outlining the services available from and through the Unit, (3) visits by the Unit staff to schools, colleges and universities to discuss in detail the services and support obtainable through the Unit, and (4) participation by the Unit staff in a wide variety of meetings, conferences, and informal sessions with individuals and groups representing public and private agencies and many segments of the business and industrial community.

The coordination of research in occupational education was selected as one of the objectives of the Unit because it was believed that through this coordination the quality of research could be improved and needless duplication of effort could be eliminated. Since the Unit was established, the process has involved many of the activities described in the preceding paragraphs and required, in addition, a careful review and analysis of past, ongoing, and planned research activities to determine the merit, originality, and applicability of proposed projects. The coordination process has also served to focus the research resources of the State on the priority areas of need identified by other Unit activities.

Another Unit objective has been to assist agencies and institutions in the development of research proposals and in obtaining funds to support their occupational research activities. The accomplishment of this objective has involved the identification of funding sources, the preparation of informational materials describing the availability and sources of funds, and the provision of specific advisory, consultative, and technical services to agencies and institutions regarding project development and funding. Activities directed toward the accomplishment of this objective have included the development and dissemination of guidelines, the development and implementation of procedures to insure expeditious processing of proposals and funding of projects, and contacts with possible funding sources to secure information on specific funding requirements.

The fifth major objective of the Unit has been the acquisition and dissemination of information on the progress and application of occupational research. The accomplishment of this objective has involved the collection, indexing, cataloguing, and distribution of research documents and other publications from many sources. A research materials library is maintained by the Unit and more than 1,000 cross-indexed documents are available to readers on a browsing or check-out basis. The Unit maintains a complete file of RIE, AIM, and ARM, and has immediate access to a complete ERIC microfiche collection and the necessary reader-printer equipment. The Unit dissemination specialist regularly reviews, abstracts, and otherwise processes incoming documents for subsequent dissemination. Documents of local or regional origin are processed and forwarded to selected out-of-state addressees including the Vocational-Technical ERIC Clearinghouse at Ohio State University. The dissemination specialist may also arrange for reproduction of selected documents for limited local distribution.

RESULTS

The results achieved by the Unit during the funding period have been varied. Some results, such as the research projects described in the following paragraphs, serve as direct evidence that the activities of the Unit have been fruitful. Other results are less tangible. For example, no conclusive evidence can be presented in this report that the efforts of the Unit resulted in (1) an improvement of the climate for occupational research in Texas, (2) a favorable change in the attitude of administrators and educators concerning occupational research, (3) an upgrading of the image of occupational education among educators and non-educators, and (4) an increased acceptance of research as a continuous and essential function of occupational education; yet it may be asserted with confidence that the Unit made a definite contribution to these outcomes.

Results in the form of research and developmental projects which were stimulated, facilitated, and coordinated by the Unit are summarized on the following pages. As previously noted, all of these projects were supported with funds made available to the Unit under Section 4(a) of the 1963 Act.

A Follow-Up Study of Adult Basic Education - (Conducted by Brownsville Consolidated Independent School District, Brownsville, Texas)

This study involved a comparison of the scholastic attendance and scholastic achievement of first grade students whose parents participated in the adult basic education program (experimental group) with the scholastic attendance and scholastic achievement of first grade students whose parents did not participate in the adult basic education program (control group). The results of the study show (1) the attendance rate of the experimental group was higher than the attendance rate of the control group and (2) the experimental group attained a higher average achievement test score than the control group. A final report describing this project was published and disseminated in January 1969.

A Pilot Project to Train Mentally Retarded Girls as Nurses Aides - (Conducted by St. Philip's College, San Antonio, Texas)

This pilot project was initiated to determine the feasibility of training mentally retarded girls as nurses aides. The project involved classroom instruction as well as supervised training in a cooperating hospital. Fifty-one mentally retarded girls participated in the project. One-third of the participants successfully completed the training and were subsequently employed as nurses aides. A final report describing this project was published and disseminated in January 1969.

A Study of Health Occupations Training Requirements - (Conducted by Amarillo College, Amarillo, Texas)

This one-year study involved (1) a survey of manpower needs in

health occupations and (2) the development of a junior college training program designed to prepare enrollees for employment in health occupations. The final report of this project, which was published and disseminated in September 1968, contained a recommendation that a "School of Health Occupations" be established as an organizational unit within Amarillo College.

A Project to Develop a Plan for a Vocational Industrial and Technical Education Curriculum Center - (Conducted by Texas A&M University, College Station, Texas)

This project involved the development of a comprehensive plan for the establishment of a curriculum development center and educational laboratory to serve the vocational industrial and technical education needs of the State of Texas. The planning document produced by this project sets forth requirements for the establishment, organization, and operation of the proposed development center. The objectives and activities of the proposed center are outlined in detail and recommendations are made for staffing and funding. The completed planning document was published and disseminated in July 1968.

A Project to Determine the Requirements for Employment in Two Off-Farm Agricultural Occupations - (Conducted by Texas A&M University, College Station, Texas)

This project was initiated to identify the level of knowledge and skills required for becoming an entry level worker in the occupational categories of farm machinery service and repair and ornamental horticulture. The project was completed in June 1969, and five publications, describing various aspects of the project, have been produced and disseminated.

A Study of Post-Secondary Automotive Mechanics Programs - (Conducted by Central Texas College, Killeen, Texas)

This project, initiated in December 1968, involves a survey and evaluation of the facilities, equipment and curricula requirements for automotive mechanics programs at the post-secondary level in Texas. A major objective of the project is the production of comprehensive guidelines for use by the State Agency in the development of improved programs of training in this occupational specialization. The project is to be completed in June 1970.

A Project to Develop Occupational Guidance Materials - (Conducted by El Centro College, Dallas, Texas)

This project is focused on the development of a series of film strips and coordinated magnetic tapes designed to provide occupational guidance information to students and prospective students at the post-secondary level. The guidance materials will include up-to-date information on job requirements, working conditions, earnings, and opportunities for advancement in nine technical occupations. The project is to be completed during July 1969.

A Study to Determine the Need for Occupational Education in Wheeler County, Texas - (Conducted by Region 16 Education Service Center, Amarillo, Texas)

This study had three principal objectives: (1) to identify, insofar as possible, the occupational education needs of the citizens of Wheeler County, Texas, (2) to determine the extent to which these needs are being met, and (3) to interpret these findings in terms of implications for future action. The study was initiated in January 1969 and was completed in July 1969. A final report has been published and disseminated.

A Project to Provide Prevocational Work Experience for Blind Students - (Conducted by Texas School for the Blind, Austin, Texas)

This project, developed in cooperation with the Department of Special Education, has five major objectives: (1) to investigate, identify, refine, test, and publish the methods and adaptations which would be necessary in integrating blind and partially sighted students into existing vocational education programs, (2) to design vocational cooperative education programs specifically for blind and/or partially sighted students, (3) to compile a list of occupational areas and employment opportunities in Texas which are suitable to blind and partially sighted students, (4) to produce and disseminate a color/sound film which will demonstrate problems, solutions, and activities relative to this innovative approach to educating the blind, and (5) to share the results with appropriate personnel in local education agencies and other agencies which serve blind and partially sighted students. The project is scheduled for completion during September 1969.

A Pilot Project to Develop a Training Program for Hospital Central Service Technicians - (Conducted by El Centro College, Dallas, Texas)

The principal objectives of this project were (1) to develop a program for educating and training central service technicians with sufficient skills to work efficiently in central service departments of hospitals, (2) to develop instructional materials and training aids to be used on an experimental basis in the pilot study, and (3) to screen and select participants for the pilot project, particularly from among the disadvantaged in the community. The project was completed in January 1969. A report describing the project in detail was published and disseminated in July 1969.

A Study of Buildings and Equipment in Texas Junior College Drafting Technology Programs - (Conducted by Texas A&M University, College Station, Texas)

The major purpose of this study was to collect detailed information about the facilities and equipment required to conduct programs in drafting and design technology in the public junior

colleges of Texas. The results of the study, in association with the results of other studies now in progress, will lead to the preparation of standardized guidelines for post-secondary programs in drafting and design technology. The study was completed in August 1969. The final report has been published and disseminated.

A Study of Texas Junior College Drafting Technology Curricula - (Conducted by Texas A&M University, College Station, Texas)

The objectives of this study are to collect, analyze, and inventory course content data from the drafting technology curricula of the public post-secondary schools of Texas. The results of the study, in association with the results of other studies now in progress, will contribute to the development of standard guidelines for use in post-secondary drafting and design technology program development. The study is scheduled for completion on November 30, 1969.

A Study to Determine the Qualifications Necessary for Employment in Drafting and Design Technology Occupations - (Conducted by Texas A&M University, College Station, Texas)

This study involves a survey of selected industries to determine the essential qualifications necessary for employment in occupations requiring training in drafting and design technology. The results of the study, in association with the results of related studies now in progress, will provide a sound basis for the establishment of guidelines and procedures for program and curricula development at the junior college level. The study is to be completed in November 1969.

A Study of Post-Secondary Electronics Technology Programs - (Conducted by Texas A&M University, College Station, Texas)

The objectives of this study were to collect current information about public post-secondary programs in electronics technology and to prepare a comprehensive descriptive report which may be used by vocational education program planners in the development and implementation of up-to-date programs and curricula. The results of the study were published and disseminated in August 1969.

A Project for the Development of Home Economics Instructional Materials - (Conducted by Texas Technological College, Lubbock, Texas)

This developmental project was initiated September 1, 1967, and has continued during the period covered by this report. The project has produced a variety of home economics instructional materials which have been disseminated to home economics education activities throughout the State. Current emphasis is on the development of instructional materials for use in programs designed to prepare students for employment in gainful home economics occupations. A proposal for the continuation of the project has been received and it is anticipated that the project will be funded through June 30, 1970.

Other major results of Unit activities during the funding period were:

Preparation of Guidelines for the Development of Vocational Education in Texas Through 1975-76

The Unit staff and other members of the Department of Vocational Education assisted the State Advisory Committee on Vocational Education in the preparation of a special report to the State Board for Vocational Education. The report, which was published and disseminated in September 1968, included (1) an examination of the demographic and economic factors that influence the development of vocational education, (2) an analysis of the present status of vocational education in terms of programs, enrollments, and costs, (3) an estimate of the future growth of vocational education based on past trends and anticipated developments, (4) an estimate of the costs of future program development, and (5) recommendations for action.

Development of the Texas State Plan for Vocational Education Under the Vocational Education Amendments of 1968

The Unit staff worked with other departmental staff in the development of the new Texas State Plan for Vocational Education required under the 1968 Amendments to the Vocational Education Act of 1963. The Unit staff participated in the development of various sections of Part I of the plan (Administrative Provisions) and collected, analyzed, and tabulated the statistical data required for the preparation of Part II of the plan (Long Range Program Plan Provisions). The long range projections included in Part II of the plan, including the estimates of future expenditures, were also developed by the Research Unit staff. The development of these sections of the plan was closely coordinated with the Texas Advisory Council on Vocational Education. The plan has been submitted to the U. S. Office of Education.

Development and Dissemination of Publications

In connection with activities described elsewhere in this report, the Unit staff participated in the coordination, development, and dissemination of the following publications.

"Guidelines for the Development of Vocational Education in Texas Through 1975-76" (Texas Advisory Committee on Vocational Education)

"A Study to Compare the Scholastic Attendance and the Scholastic Achievement of First Grade Students Whose Parents Participated in the Adult Basic Education Program with the Scholastic Attendance and Scholastic Achievement of First Grade Students Whose Parents Did Not Participate in the Adult Basic Education Program" (Brownsville Consolidated Independent School District)

"Research and Development for Nurse's Aide Training" (St. Philip's College)

"Planning and Development of a School of Health Occupations for Amarillo College" (Amarillo College)

"Developmental Plan for the Vocational Industrial and Technical Education Curriculum (Vi-Tec) Center" (Texas A&M University)

"Opportunities and Requirements for Entry Into the Agricultural Machinery Mechanics Trade" (Texas A&M University)

"Why Not Become a Farm Tractor and Implement Mechanic?" (Texas A&M University)

"Why Not Be a Farm Tractor and Implement Partsman?" (Texas A&M University)

"Why Not Choose a Career in Ornamental Horticulture?" (Texas A&M University)

"Requirements and Opportunities for Entry Workers in the Occupation of Producing and Marketing Ornamental Nursery and Greenhouse Specialties" (Texas A&M University)

"Course Outline for Training Farm Tractor and Implement Mechanics" (Texas A&M University)

"Guidelines for Preparation of Research Proposals" (Texas Education Agency)

"A Study of Buildings and Equipment in Texas Junior College Drafting Technology Programs with Implications for a Planning Guide" (Texas A&M University)

"An Investigation Into Public Post-Secondary Electronic Technology Programs in Texas with Implications for Planning" (Texas A&M University)

"A Study of Wheeler County Schools" (Region 16 Education Service Center, Amarillo, Texas)

"A Study of Wheeler County Schools (Condensed Version)" (Region 16 Education Service Center, Amarillo, Texas)

Summer Workshops

During the summer of each year during the funding period, the Unit staff participated in the development of a number of workshops devoted to topics of special interest to vocational educators. Workshop sponsors were given assistance in the development and preparation of reports describing the activities and outcomes of these training sessions.

CONCLUSIONS AND RECOMMENDATIONS

An appraisal of the Unit's activities and achievements during the funding period should confirm that the establishment and operation of the Unit, as provided for in the 1966 proposal, has offered a practical and effective solution to the problem of inadequate occupational research coordination and dissemination in Texas.

As set forth in the 1963 Act and the 1968 Amendments, the objectives of public vocational-technical education are to develop, maintain, extend, and improve programs of occupational education to the extent that persons of all ages in all communities will have ready access to occupational education and training which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such instruction. The Texas Occupational Research Coordinating Unit, in carrying out the activities and achieving the results described in this report, has made a measurable contribution toward the ultimate accomplishment of these state and national objectives.

Although much has been accomplished, much more remains to be done. An expanded program of research and development is needed if the objectives of vocational education are to be met. Increased emphasis must be placed on studies devoted to program evaluation, including analyses of career patterns, the amounts and kinds of vocational education considered necessary by employers, the income of graduates, the influence of vocational education on dropout rates, and other factors relating to the success of participants in vocational programs. Comparative studies of alternative methods of preparing individuals for work must be undertaken. Curriculum experimentation, development, and improvement must be given added emphasis. A critical examination of present practices of vocational and adult education, particularly those that relate to the teaching of disadvantaged youth, must be given high priority. The development of specialized curricula and instructional materials for the teaching of new and emerging occupational skills must also be emphasized. Pilot-demonstration programs will be necessary. Research and experimentation must also be focused on new administrative structures and organizational patterns for establishing and carrying out new vocational and adult education programs. New and improved methods of teacher utilization and methods for the application of innovations in educational technology to the needs of adult and vocational education must be developed. High priority must be accorded to the recruitment and development of competent professional personnel at all levels of responsibility. Studies must be undertaken to determine the numbers, qualifications, and sources of professional personnel needed to meet the staffing requirements of current and projected adult and vocational education programs. Studies are also needed to determine how present teacher training programs can be improved. In-service training of vocational teachers, counselors, administrators and other professional personnel at the State and local levels must be given greater emphasis. Increased emphasis must be placed on studies leading to the improvement of adult and continuing education and improved utilization of existing facilities for adult education. New and expanded studies must be conducted to provide current information pertaining to future employment needs of business and

industry and to determine the knowledge and skills required for employment in specialized occupations. Studies leading to the development of long-range plans for the development and financing of vocational, technical, and adult education are essential.

As stated in the introduction to this report, the Texas State Plan for Vocational Education provides for the continuation of the Texas Occupational Research Coordinating Unit under Section 131(b)(1) of the Vocational Education Amendments of 1968. If funds for support of research in occupational education are allocated as authorized under the Act, progress can continue to be made toward the accomplishment of the state and national objectives for occupational education.